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10/591,221

08/31/2006

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EXAMINER

CHAPMAN JR, JOHN E

ART UNIT

PAPER NUMBER

2856

MAIL DATE

DELIVERY MODE

01/16/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/591,221

Applicant(s)

HOTELLING ET AL.

Examiner

John E. Chapman

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/31/06.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the communications interface mounted off of the assembly (claim 12) must be shown or the feature canceled from the claim(s). Note that the communications interface (1355) in Fig. 13 is mounted on the assembly (1110) in Fig. 12 and is not mounted off of the assembly. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8, 18, 20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 8, "another calibration value" is vague and indefinite. It is not clear what the purpose of "another calibration value" is. Presumably it is to calibrate something, but what it calibrates and how it cooperates with the first calibration value are not clear.

Regarding claim 18, "another calibration value" is indefinite, since there is no antecedent basis for a first calibration value. In addition, it is not clear what the purpose of "another calibration value" is. Presumably it is to calibrate something, but what it calibrates and how it cooperates with other elements of the motion sensor are not clear.

Regarding claim 20, the preamble recites a "rotational rate gyroscope as in claim 13," but claim 13 does not recite a rotational rate gyroscope. Hence, it is not clear whether the claim is limited to a rotational rate gyroscope.

Regarding claim 21, the preamble recites a "rotational rate gyroscope as in claim 18," but claim 18 does not recite a rotational rate gyroscope.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Jeanroy (2003/0010120).

Jeanroy discloses a motion sensor comprises a vibrating member (1) mounted on an assembly (2) isolated from vibrations by suspension members (6a), and a sensor (8) mounted on the assembly for detecting movement of the vibrating member in response to rotation of the assembly, wherein the sensor (8) is electronically coupled to the suspension members. See paragraphs [0051] and [0064].

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeanroy.

Regarding claim 2, the only difference between the claimed invention and the prior art consists in providing digital electronics on the assembly (2) of Jeanroy. It is well known in the art to use digital data in lieu of analog data, for example, to improve the signal-to-noise ratio, and merely to provide an analog-to-digital converter on the assembly (2) of Jeanroy would have been obvious for the purpose of providing a digital output signal on suspension members (6a).

Regarding claim 5, it is well known in the art and would have been obvious to one of ordinary skill in the art to store a calibration value in order to provide a calibrated output signal.

Regarding claim 6, it is well known to determine the calibration value externally.

Regarding claim 7, it is well known to determine the calibration value internally.

Regarding claim 8, it would have been obvious to determine a calibration value both externally and internally.

Regarding claim 9, it is well known in the art to control the amplitude of vibration of a vibrating member.

Regarding claim 10, it is well known in the art to control the startup frequency of the driver of a vibrating member.

Regarding claim 11, it would have been obvious to use an auto-calibration loop that uses an externally provided calibration factor.

8. Claims 3, 4 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeanroy as applied to claim 2 above, and further in view of Hamisch et al. (5,247,252) or Henderson et al. (5237,871).

Regarding claims 3 and 22, the only further difference between the claimed invention and the prior art consists in using helical springs to mount the assembly (2) of Jeanroy. Hamisch discloses contact springs 18 for both the elastic suspension of the sensor (10) and the transmission of the electric measuring signal (see column 3, lines 47-54). Henderson discloses springs (36) for suspending a sensor as well as providing electrical connection (see column 6, lines 34-37). Accordingly, it would have been obvious one of ordinary skill in the art to use springs to mount the assembly (2) of Jeanroy.

Regarding claim 4, using a serial digital communication protocol is common in the art.

9. Claims 12-21 are rejected under 35 U.S.C. 103(a) as unpatentable over Toyota (GB 2378517).

Toyota discloses a motion sensor (130) mounted on an assembly isolated from vibrations by suspension members (140; see paragraph [0092]), the motion sensor comprising a vibrating member (20) mounted on the assembly and a sensor (53) mounted on the assembly for detecting movement of the vibrating member in response to rotation of the assembly, wherein the sensor provides an output signal (92) in Fig. 7. The only difference between the claimed invention and the prior art consists in providing digital communication with a communications interface mounted off of the assembly. While the output signal (92) appears to be analog (see paragraph [0068]), Toyota teaches that the controller in Fig. 7 may be implemented as a programmed general purpose computer (see paragraph [[0097]]), and it would have been obvious to one of ordinary skill in the art to provide a digital output signal (92) in digital communication with a communications interface mounted off of the assembly, when implementing the controller in Fig. 7 as a programmed general purpose computer.

Regarding claim 14, using a serial digital communication protocol is common in the art.

Regarding claim 15, it is well known in the art and would have been obvious to one of ordinary skill in the art to store a calibration value in order to provide a calibrated output signal.

Regarding claim 16, it is well known to determine the calibration value externally.

Regarding claim 17, it is well known to determine the calibration value internally.

Regarding claim 18, it would have been obvious to determine a calibration value both externally and internally.

Regarding claim 19, a fixed voltage source (76) controls the amplitude of vibration of the vibrating member. It would have been obvious to transmit a digital value in order to fix the value of the voltage source (76).

Regarding claim 20, it is well known to provide a driver having an initial start-up frequency set close to the resonant frequency in order to minimize start-up time.

Regarding claim 21, it would have been obvious to use an auto-calibration loop that uses an externally provided calibration factor.

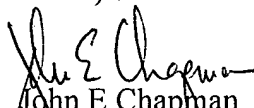
10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hayworth et al. (6,823,734) discloses a rotational rate gyroscope comprising isolation flexures (130).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John E. Chapman whose telephone number is (571) 272-2191. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


John E Chapman
Primary Examiner
Art Unit 2856